ECO316: Applied Game Theory

Problem Set #6 Solutions

1. **Naivety and Self-Control:**

   (a) When the agent has perfect self-control. The benefit of attending the gym is \$36. For members, the cost is \$20 when effort costs are high and \$0 when effort costs are low; for non-members, the cost is \$35 when effort costs are high and \$15 when effort costs are low. As these are all less than \$36, a perfect self-control agent always attends the gym.

   (b) Yes, as the perfect self-control agent always attends the gym, they would pay \$75 in attendance fees per month versus \$50 per month for a membership, so the membership reduces total cost.

   (c) Again, the benefit is \$36. However, the costs are now higher. For members: \$40 when effort costs are high and \$0 when effort costs are low; for non-members \$55 when effort costs are high and \$15 when effort costs are low. Note that when effort costs are high, the 'doer's' perceived cost is greater than the benefit, but when effort costs are low, the cost is still lower than the benefit. Hence, the limited self-control agent only attends when effort costs are low.

   (d) Purchasing a gym membership is worth it when the agent attends at least 4 times in a month